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Wilkins score for severe mitral stenosis: what is beyond the procedural considerations?

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Background: Percutaneous transvenous mitral balloon valvotomy (PTMV) optimal results are usually achieved when echocardiographic Wilkins score (WS) is ≤8. WS from 9 to 11 represent a gray zone in which only some patients have good results.

Aim: The aim of this study was to determine the early and long term results of this procedure in patients with WS 8 or less and at the gray WS zone.

Methods: Retrospective review of clinical records of patients with rheumatic MS submitted to PTMV from January 1990 to December 2010. Follow-up was obtained by clinical records when available. Procedure was considered unsuccessful when post-procedure MV area (MVA) was <1.5cm^2.

Results: We analyzed data for 378 patients with a WS ≤11, 80.5% were women. Mean age at the time of repair was 33 years [10 to 76 years] and the mean follow up time was 74 months. Before the procedure, 33.9% had a WS in the gray zone. They were older (36 years vs. 31 years, p<0.001) with a frequent history of mitral valvuloplasty (34.4% vs. 12%, p <0.001). Males presented more in the gray zone (25.8% vs 16.8%, p = 0.038) while pregnant women had a WS ≤8 (20.4% vs. 11.7%, p= 0.035). Patients in the gray zone presented more frequently with atrial fibrillation (39.1% vs. 21.2%, p< 0.001). There was no differences regarding the functional status or the baseline echocardiographic MVA measurement by planimetry (1.07cm^2 vs 1.05cm^2, p=0.26).

PTMV was safe in the two groups with same rates of success but a lower mitral surface gain in the gray zone group (0.88cm^2 vs. 1.05cm^2, p<0.001).

During follow up, patients in the gray zone had significantly lower event free survival (freedom from death, systemic embolism and restenosis) (58.6% vs. 69.2%, p<0.001) and had a higher mortality (3.9% vs 0.8%, 0.023), higher rates of restenosis (33.6% vs. 17.8%, p<0.001) and required more frequently a mitral valve replacement (16.4% vs. 8.9%, p= 0.005)

Conclusion: PTMV was a safe procedure in both WS groups. Optimal results patients with a WS≤8 zone. Patients with a WS 9-11 experienced worse outcomes during follow up.

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Percutaneous balloon mitral commissurotomy in children and young adults with rheumatic mitral stenosis

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Objective: To determine the efficacy and the safety of percutaneous balloonmitral commissurotomy (PBMC) in young patients (aged under 18 years – olds) with rheumatic mitral stenosis and to compare these results with those of adult patients.

Patients and Methods: Percutaneous transvenous mitral commissurotomy (PTMC) using the Inoue technique was performed in 480 patients with rheumatic mitral stenosisbetween 1998 and 2013. 41 were aged under 18 years – old (group 1). The other 439 patients (group 2) had a mean age of 34±11.9 years. All patients were assessed clinically. An echocardiography was performed before and after the procedure.

Results: Mean age in group 1 was 15±2.95 years (range 8 to 18) with a women predominance (73.2% vs. 26.8%.). In group 1, there was a significant increase of the mean mitral valve area index (MVAI) (0.84±0.24 vs 1.78±0.39cm^2, p <0.001), a significant reduction of the mean transmitral pressure gradient (21.78±6.62to8.75±5.87mm Hg, p <0.001) and of the mean left atrial pressure (28.46±7.59to12.87±5.57 mmHg, p < 0,001) from pre- to post-PBMC, respectively. Mild mitral regurgitation developed in 12 and moderate mitral regurgitation developed in 3 patients.The mean follow-up was 92±40 months. Improvement in symptomatic status by at least one NYHA class was seen in the majority of patients.A good result during the follow up was observed in 46.3% of controlled patients and restenosis in 53.7% of cases with an average of 46±34 months. The immediate hemodynamic results in children were compared to 439 adult patients who underwent PBMC in the same period. The outcome was similar in both groups. Children were found to have significantly higher rate of mitral restenosis compared to adults (53.7% vs. 31.9%).

Conclusion: Despite a high rate of restenosis, PBMC is very effective and safe in children, and consider that it should be the procedure of choice for young patients with symptomatic rheumatic mitral stenosis.

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Factors predicting mitral restenosis after successful percutaneous mitral commissurotomy

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Introduction: Percutaneous mitral commissurotomy (PMC) is the alternative treatment of choice for mitral stenosis (MS). Its immediate and medium term results are comparable to those of surgical commissurotomy, however in the long term there is a risk of restenosis. The purpose of this study was to determine the factors predicting restenosis after PMC.

Methods: 322 patients (66% women), average age: 35±13 years (9-75 years) having a tight MS and treated by PMC with Inoué balloon. The anatomic aspect of the mitral apparatus before PMC has been studied according to the criteria of the Wilkins score with a concomitant study of the state of mitral commissures. The primary success of PMC was defined as follows: mitral area (MA) post-PMC >1,5cm^2 and gain in MA >25% and mitral regurgitation (MR) ≤ grade 2. Mitral restenosis is defined as a MA <1,5cm^2 and/or loss > 50% of initial gain in MA.

Results: The rate of primary success of PMC was 86% and mean MA post PMC was 1,82±0,33 cm² compared to MA pre-PMC of 1±0,18cm² (p<0.0001). Opening of two commissures has been observed in 74% of patients. After an average period of 62±32 months, only 12% of patients had a dyspnea stage III-IV of NYHA, MA was 1,64±0.3cm² (p<0.001) and mitral restenosis happened in 47 patients (20%) after a period of 60,48±27 months (22-124 months). The independent predictors of mitral restenosis after a successful PMC were: previous surgical commisurotomy, Wilkins score >8, MA after PMC <1,8 cm² and absence of bicommissural opening post PMC.

Conclusion: A favorable anatomy of mitral apparatus and the optimisation of immediate result of PMC are the guaranty for the maintain of good result in the long term.

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Evolution of mitral organic valve disease in Vietnam during last two decades

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Introduction: Currently, degenerative etiologies of valvular diseases predominate in developed countries, but there are few data in developing countries like Vietnam.

Methods: This Vietnamese retrospective study included 2734 patients who had mitral valve surgery in the Heart Institute, in Ho Chi Minh City, Vietnam. They were divided into two periods: 1636 cases in 1995-2000 and 1098 cases

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